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Jingru Qu* (jingru.qu@gmail.com), No. 238, Songling Road, Laoshan District, Qingdao, Shandong 266100, Peoples Rep of China. *Lax pair and exact solutions for a generalized variable-coefficients nonlinear Schrodinger equation*. Preliminary report.

In the paper, a Lax pair is presented for a generalized variable-coefficients nonlinear Schrodinger equation in inhomogeneous optical fiber media with the loss/gain and the frequency chirping. Then on the basis of the Lax pair, some exact analytical solutions are constructed by solving its linear non-isospectrum problem. From our results, many known results of some nonlinear Schrodinger equation can be recovered by means of some suitable selections of the arbitrary functions and arbitrary constants. With computer simulation, the main soliton features of bright and dark solitons, and Jacobi elliptic functions solutions are shown by some figures. These results will be useful in optical pulse propagating in inhomogeneous optical fiber media. (Received July 25, 2010)